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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,662	02/10/2004	Hiroyuki Suzuki	009683-498	9430

21839 7590 09/12/2007  
BUCHANAN, INGERSOLL & ROONEY PC  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER
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TYLER, NATHAN K

ART UNIT	PAPER NUMBER
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2625

NOTIFICATION DATE	DELIVERY MODE
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09/12/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/774,662

Applicant(s)

SUZUKI ET AL.

Examiner

Nathan K. Tyler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, filed 30 May 2007, with respect to Kawai have been fully considered and are persuasive. The rejections using Kawai as a 102 or base reference for 103 have been withdrawn.
2. Applicant's arguments with respect to the use of Kondo to modify Kawai have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments filed 30 May 2007, with respect to Shirasawa have been fully considered but they are not persuasive.

Regarding Shirasawa, the Applicant argues that establishing the predetermined color space is done based on Euclidian distance and not lightness and chromaticity data. In response, the Examiner respectfully disagrees. The color space is established by designating which RGB values are in the color space, and which RGB values are out of the color space as shown in Shirasawa Fig. 7B. The Red, Green, and Blue values of a color determine the lightness and chromaticity of the color, and the RGB value of a color is easily interchangeable with the Hue, Saturation, Brightness value of the color.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 4, 7, 8, 11, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirasawa et al. (US 5689590 A).

Regarding **claims 1 and 8**, Shirasawa discloses an input portion inputting color image data read from a document by a reading portion (“a color image represented on a sheet of paper is read by means of an image input device including a scanner” at column 5, line 25), a detector detecting whether the input color image data is out of a predetermined color space (Fig. 3, numeral 130 “background noise removing unit”), wherein the predetermined color space is based on lightness and chromaticity data (see Fig. 7B and Examiner’s comments above regarding Shirasawa); and a determining portion determining that the color image data is image noise when the detector detects that the color image data is out of the predetermined color space (See Fig. 7B, pixels with RGB density values that fall inside zone Z0 are determined to be “background noise.” “in RGB color space, a color located near the origin is determined as white or a

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highlight. (A color determined as white or as a highlight is a color on which the background [noise] removing process will be performed" at column 9, line 58).

Regarding **claims 4 and 11**, Shirasawa discloses a corrector correcting the color image data determined by the determining portion as image noise (See Fig. 7B, pixels determined to be background noise are adjusted to a uniform density value (0,0,0)).

Regarding **claim 7**, Shirasawa discloses an image producing apparatus comprising the image processing apparatus according to claim 1 ("This space conversion is performed in order to provide image data compatible with an output device. That is, for example, the image data to be provided must be in the RGB color space when the image is to be represented on a display screen, and the image data to be provided must be in the YMC color space when the image is to be represented on a sheet of paper by means of a color printer." At column 8, line 51).

Regarding **claims 14 and 15**, Shirasawa discloses that the lightness data of the color image data is converted using a threshold table to generate a threshold which is compared to the chromaticity data of the color image data to determine if the image data is out of the predetermined color space (The threshold table disclosed by Shirasawa is shown in Fig. 7B. Imagining a color point plotted in the RGB space shown in Fig 7B, the lightness of this point is given by the distance from the point to the origin. The chromaticity is determined by the angle of this vector. Therefore the lightness (distance) is compared to this table to generate a threshold. Although chromaticity data is considered, for the table shown in Fig. 7B, chromaticity will have no impact. The color is compared to the threshold table to determine whether or not it is out of the predetermined color space).

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shirasawa and Kawai.

Regarding **claims 2 and 9**, while Shirasawa discloses an image processing apparatus that determines image data to be noise data when it is out of a predetermined color space, specifically when the image data is white image data that has an improper white value (see Fig. 7B), Shirasawa does not disclose that the predetermined color space is further determined in accordance with a characteristic of the reading portion.

Kawai discloses an image processing apparatus for noise removal, where image data is judged to be noise when it is out of a predetermined color space that is determined in accordance with a characteristic of a reading portion ("The control unit 10 then determines, in Step S108, if the peak white value  $W_{sub.P}$  is smaller than or equal to the reference white value  $W_{sub.R}$ . The reference white value  $W_{sub.R}$  is such a value (i.e., 120) that no normal white output may have when the image sensor 2 performs the image reading operation... In this case, the control unit 10

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determines that the reference white/black plate 1a the CCD 2a carries a foreign particle such as dust or the like.” at Kawai column 10, line 9.)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to further configure the color space disclosed by Shirasawa in accordance with a characteristic of a reading portion as disclosed by Kawai, so that noise caused by particulates on the reading surface could be eliminated, as well as background noise in the image (“The reference white value  $W_{sub.R}$  is such a value (i.e., 120) that no normal white output may have when the image sensor 2 performs the image reading operation... In this case, the control unit 10 determines that the reference white/black plate 1a the CCD 2a carries a foreign particle such as dust or the like.” at Kawai column 10, line 9).

8. Claims 3, 5, 6, 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shirasawa and Kondo et al.

Regarding **claims 3 and 10**, Shirasawa does not disclose that when the color image data detected by said detector to be out of said predetermined color space continues in a sub scanning direction of said reading portion, said determining portion determines the continuing color image data as image noise.

Kondo discloses that when the color image data detected by said detector to be out of said predetermined color space continues in a sub scanning direction of said reading portion, said determining portion determines the continuing color image data as image noise (“the change of the second phenomenon occurs in a predetermined number of lines in the sub-scanning

direction... it is judged that stripes occur due to the dust D adhering to the reading positions of the corresponding pixels” at column 8, line 13).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to expand the determining portion determining that color image data is noise when image data is out of a predetermined color space as taught by Shirasawa to also determine that image data is noise when the data out of a predetermined color space continues in a sub-scanning direction as taught by Kondo, so that dirt could be detected on the contact glass as well as the reference plate (“...detection of stripes in the sub-scanning direction on an image due to adhesion of dust to the contact glass...” at Kondo column 7, line 1).

Regarding **claims 5 and 12**, Shirasawa does not disclose a reading portion having a plurality of line sensors arranged in a sub scanning direction at predetermined intervals and respectively corresponding to different colors.

Kondo discloses a reading portion having a plurality of line sensors arranged in a sub scanning direction at predetermined intervals and respectively corresponding to different colors (“Concretely, the CCD sensor includes three pixel rows 41R, 41G, and 41B... in a direction perpendicular to the pixel arrangement direction” at column 4, line 29).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to use the plurality of line sensors taught by Kondo as the color image data reading portion in the system taught by Shirasawa, as it is very well known in the art that line sensors are readily available, low-cost, and have been proven durable for color scanning purposes.

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Regarding **claims 6 and 13**, Shirasawa does not disclose that the reading portion reads the color image data with the reading portion kept stationary and a document moved with respect to the reading portion.

Kondo discloses that the reading portion reads the color image data with the reading portion kept stationary and a document moved with respect to the reading portion ("The first reading unit reads a plurality of color components of a document image while scanning the document fed to the reading position by the feeding unit" at column 2, line 9)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to keep the reading portion taught by Shirasawa stationary while feeding the document to the reading position as taught by Kondo, as this well known method of scanning a document is faster than alternative methods ("the latter image reader, which moves a sheet document, is more advantageous than the former one, which moves the reading optical system, in terms of improvement in document image reading speed." at Kondo column 1, line 22).

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Tyler whose telephone number is 571-270-1584. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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